

Data-Engineering-Pipeline-with-Snowflake-and-dbt

→ Snowflake configuration

-- 1: Switch Role & Create Warehouse

```
USE ROLE ACCOUNTADMIN;
```

```
CREATE WAREHOUSE IF NOT EXISTS P4_WAREHOUSE
```

```
WITH WAREHOUSE_SIZE = XSMALL
```

```
AUTO_SUSPEND = 3600
```

```
AUTO_RESUME = TRUE
```

```
INITIALLY_SUSPENDED = TRUE;
```

-- 2: Create Databases & Role, Grant Privileges

```
CREATE DATABASE IF NOT EXISTS SURVEY_DATABASE;
```

```
CREATE DATABASE IF NOT EXISTS STOCK_DB;
```

```
CREATE ROLE IF NOT EXISTS P4_ROLE;
```

```
GRANT ROLE P4_ROLE TO ROLE SYSADMIN;
```

```
GRANT USAGE ON WAREHOUSE P4_WAREHOUSE TO ROLE P4_ROLE;
```

```
GRANT ROLE P4_ROLE TO USER AWARIA31;
```

```
GRANT OWNERSHIP ON DATABASE SURVEY_DATABASE TO ROLE P4_ROLE;
```

```
GRANT OWNERSHIP ON DATABASE STOCK_DB TO ROLE P4_ROLE;
```

```
GRANT USAGE ON DATABASE SURVEY_DATABASE TO ROLE P4_ROLE;
```

```
GRANT USAGE ON DATABASE STOCK_DB TO ROLE P4_ROLE;
```

-- 3: Switch to P4_ROLE & Create Schemas

```
USE ROLE P4_ROLE;
```

```
USE DATABASE SURVEY_DATABASE;
```

```
CREATE SCHEMA IF NOT EXISTS SURVEY_SCHEMA;
```

```
USE DATABASE STOCK_DB;
```

```
CREATE SCHEMA IF NOT EXISTS STOCK_SCHEMA;
```

GRANT OWNERSHIP ON SCHEMA SURVEY_DATABASE.SURVEY_SCHEMA TO ROLE P4_ROLE;

GRANT OWNERSHIP ON SCHEMA STOCK_DB STOCK_SCHEMA TO ROLE P4_ROLE;

→ Airbyte configuration for survey

Your 14-day trial of Airbyte will start once your first sync has succeeded.

Connections

1 healthy

+ New connection

Search

All connections All statuses All sources All destinations Tags

6h 24h 7d 30d

NAME	SOURCE NAME	DESTINATION NAME	FREQUENCY	TAGS	LAST SYNC	ENABLED
survey → Snowflake	survey	Snowflake	24 hours		3 minutes ago	●

Help Dark mode ANYA WARIA

→ Airbyte configuration for trading_books.csv and weights_table.csv files (0.5 points)

Your 14-day trial of Airbyte will start once your first sync has succeeded.

Sources

+ New source

Search

All statuses

NAME	CONNECTOR	DESTINATION	LAST SYNC	STATUS
File (CSV, JSON, Excel, Feather, Parquet)	File (CSV, JSON, Excel, Feather, Parquet)	1 Snowflake Snowflake	12 minutes ago	●
File (CSV, JSON, Excel, Feather, Parquet)	File (CSV, JSON, Excel, Feather, Parquet)	1 Snowflake Snowflake	3 minutes ago	●
survey	Google Sheets	1 Snowflake Snowflake	29 minutes ago	●

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→ Connect Airbyte to Snowflake to load trading_books and weights_table

*Screenshot of both Destinations + Connections page, showing all connections are healthy. screenshot shows each source-to-Snowflake connection individually, with healthy syncs and primary keys configured for trading_books and weights_table.

Your trial ends in 13 days. [Subscribe today](#) to keep using Airbyte after your trial ends.

Destinations

+ New destination

NAME	CONNECTOR	SOURCE	LAST SYNC	STATUS
Snowflake	Snowflake	5 sources File (CSV, JSON, Excel, Feather, ...)	14 hours ago	green

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Connections

+ New connection

5 healthy

NAME	SOURCE NAME	DESTINATION NAME	FREQUENCY	TAGS	LAST SYNC	ENABLED
survey → Snowflake	survey	Snowflake	24 hours		15 hours ago	green
trading_books → Snowflake	trading_books	Snowflake	24 hours		14 hours ago	green
File (CSV, JSON, Excel, Feather,...)	trading_books	Snowflake	24 hours		14 hours ago	green
weights_table → Snowflake	weights_table	Snowflake	24 hours		14 hours ago	green
File (CSV, JSON, Excel, Feather,...)	weights_table	Snowflake	24 hours		14 hours ago	green

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→ Data Preview on Snowflake

The screenshot shows the Snowflake Data Preview interface for the `TRADING_BOOKS` table. The table has three columns: `_AIRBYTE_RAW_ID`, `_AIRBYTE_EXTRACTED_AT`, and `_AIRBYTE_META`. The preview shows 30 rows of data, each containing a unique ID, a timestamp, and a JSON object representing metadata.

	<code>_AIRBYTE_RAW_ID</code>	<code>_AIRBYTE_EXTRACTED_AT</code>	<code>_AIRBYTE_META</code>
1	1a6cb06-e544-4bd6-a016-4f7871e1fd9e	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
2	65b3cf4f-6a39-4bec-9dbf-26b01ec004c7	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
3	d8c9a76e-1ad7-4394-bd56-215bcaaacae	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
4	27356815-9e89-4cab-a726-831abb65b04b	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
5	a3a97131-9723-47bb-a542-3dc41a17440b	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
6	2bd4596-fc04-48d7-8b0d-12e38253d2e0	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
7	53553a45-bb3d-44ac-89b8-9dcda2106a63	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
8	5f516d1a-695b-4fe6-98d5-7d88800e9438	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
9	75092163-1549-4422-b947-3f4190094b1c	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
10	db6416ea-62ac-4adf-a9ec-19082d9bfa29	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
11	ff2487f6-1074-4e39-8779-a93a7d97d316	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
12	9d635db6-8274-4503-9ceb-261cc4c341e5	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
13	a79348a1-6395-4e88-b7ee-283ee13621c5	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
14	b2851822-321b-46e2-8f89-51d33459b785	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
15	cc8d4420-6acd-4331-9213-a5b99edf7714	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
16	f901d4cd-ae43-4805-8521-2752def03b40	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
17	1b02187b-1e91-445c-abf8-7d64638110cd	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
18	29eb2ca5-d72b-4de1-bf89-6923dc16d4e2	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
19	19521064-7dd5-418f-b51e-9063e255691d	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }
20	1dbcb99b2-e70f-41a5-97e7-427318d7ce05	2025-04-03T01:33:09.000+0000	{ "changes": [], "sync_id": 32432302 }

The screenshot shows the Snowflake Data Preview interface for the `WEIGHTS_TABLE` table. The table has three columns: `_AIRBYTE_RAW_ID`, `_AIRBYTE_EXTRACTED_AT`, and `_AIRBYTE_META`. The preview shows 2 rows of data, each containing a unique ID, a timestamp, and a JSON object representing metadata.

	<code>_AIRBYTE_RAW_ID</code>	<code>_AIRBYTE_EXTRACTED_AT</code>	<code>_AIRBYTE_META</code>
1	43a0069d-f96f-41bd-93d7-d147b22bcb28	2025-04-04T01:51:51.000+0000	{ "changes": [], "sync_id": 32432302 }
2	ddb51631-0fdb-4862-851a-4de97c4adc87	2025-04-04T01:51:51.000+0000	{ "changes": [], "sync_id": 32432302 }

SURVEY_DATABASE / SURVEY_SCHEMA / SURVEY

Table Details Columns Data Preview Copy History Lineage

Data Preview (April 3, 2025, 11:09:42 AM)

100 of 147 Rows • Updated 1 minute ago

	_AIRBYTE_RAW_ID	_AIRBYTE_EXTRACTED_AT	_AIRBYTE_META
1	7cbd1279-f334-42aa-a67e-a799bb4c692c	2025-04-03T01:15:37.840+0000	{ "changes": [], "sync_id": 32431060 }
2	e6e6cea4-ea37-4916-adab-464f967734c5	2025-04-03T01:15:37.840+0000	{ "changes": [], "sync_id": 32431060 }
3	bec50daf-1513-4c89-8d34-27a1598d946e	2025-04-03T01:15:37.841+0000	{ "changes": [], "sync_id": 32431060 }
4	bfa41bda-7afc-4403-9da6-e230295a231e	2025-04-03T01:15:37.840+0000	{ "changes": [], "sync_id": 32431060 }
5	7daa095d-41ab-4eb7-9d4a-a974b1607911	2025-04-03T01:15:37.845+0000	{ "changes": [], "sync_id": 32431060 }
6	d6d4ba19-c225-40cf-bb9e-fc0339348e53	2025-04-03T01:15:37.884+0000	{ "changes": [], "sync_id": 32431060 }
7	720ccdc7-3103-4658-a3e8-fd5b40b1bdaf	2025-04-03T01:15:37.845+0000	{ "changes": [], "sync_id": 32431060 }
8	0056b910-0b2c-404c-a8ba-a8a3e6c3fb8a	2025-04-03T01:15:37.885+0000	{ "changes": [], "sync_id": 32431060 }
9	4dc3e39-10d2-4336-8f0f-5d3b957df3f8	2025-04-03T01:15:37.841+0000	{ "changes": [], "sync_id": 32431060 }
10	44b4af8a-83a0-4451-ac6f-b02caf9533c9	2025-04-03T01:15:37.881+0000	{ "changes": [], "sync_id": 32431060 }
11	2af219e0-8a2a-4d7f-911f-0c7ca894f574	2025-04-03T01:15:37.882+0000	{ "changes": [], "sync_id": 32431060 }
12	86a697c5-6000-49ce-a2ed-c7bf554074a	2025-04-03T01:15:37.841+0000	{ "changes": [], "sync_id": 32431060 }
13	02d642d2-631f-48da-bea4-9180a93361b0	2025-04-03T01:15:37.881+0000	{ "changes": [], "sync_id": 32431060 }
14	77f6fc35-a068-48c3-ae91-bb2ddbd3206c	2025-04-03T01:15:37.841+0000	{ "changes": [], "sync_id": 32431060 }
15	12ba9eff-1836-4bba-806e-7b3f38866b30	2025-04-03T01:15:37.885+0000	{ "changes": [], "sync_id": 32431060 }
16	6a591800-9b0a-4bb9-bc6a-27023e2e9496	2025-04-03T01:15:37.882+0000	{ "changes": [], "sync_id": 32431060 }
17	860c42c5-6d0f-444b-ad3e-64a32c9de3b4	2025-04-03T01:15:37.847+0000	{ "changes": [], "sync_id": 32431060 }
18	2a54e580-4525-4ee9-a1b4-66014858ccb9	2025-04-03T01:15:37.841+0000	{ "changes": [], "sync_id": 32431060 }
19	95a1d212-222e-4634-9cab-db7052c3c3e2	2025-04-03T01:15:37.885+0000	{ "changes": [], "sync_id": 32431060 }
20	050662bd-8bfe-4968-beb0-42dbf680dc3d	2025-04-03T01:15:37.845+0000	{ "changes": [], "sync_id": 32431060 }

\$394 credits left

Trial ends in 27 days

Upgrade

AW Anya Waria ACCOUNTADMIN

→ Use dbt to transform the column names to single word or two-word names with "_" separator and create a view named survey_transformed.

The screenshot shows the Snowflake web interface. On the left, the sidebar is visible with options like Home, Search, Projects, Data (selected), Databases, Add Data, Migrations, Data Products, AI & ML, Monitoring, and Admin. The user is identified as AW Anya Waria, ACCOUNTADMIN. A message at the bottom indicates \$385 credits left and trial ends in 25 days, with an Upgrade button.

The main area displays the 'SURVEY_DATABASE / SURVEY_SCHEMA / TRANSFORM_SURVEY' view. The view details show it was last updated 3 minutes ago by P4_ROLE. The table has columns: TIMESTAMP, EMAIL_ADDRESS, AGE, PRIMARY_MAJOR, and SECONDARY_MAJOR. The data preview shows 20 rows of survey responses, including fields like igallucci@wisc.edu, jwcramer2@wisc.edu, etc., with various majors like Data Science, Statistics, Mathematics/AMEP, etc.

→ Ingest data directly from Snowflake Marketplace

The screenshot shows the Snowflake web interface. The sidebar is identical to the previous one, with Data selected. The user is AW Anya Waria, ACCOUNTADMIN.

The main area displays the 'STOCK_TRACKING_US_STOCK_PRICES / STOCK / US_STOCK_METRICS' table. The table details show it was last updated 3 months ago. The table has columns: RUN_DATE, TICKER, OPEN, HIGH, LOW, CLOSE, and VOLUME. The data preview shows 20 rows of stock price data, including entries for A, AACT.WT, AB, AA, AACT, etc., with various closing prices and volumes.

FOREX_TRACKING_CURREN... / STOCK / FOREX_METRICS

Table Details Columns Data Preview

• COMPUTE_WH 100 of 7.1M Rows • Updated just now

	RUN_DATE	OPEN	HIGH	LOW	CLOSE	CURRENCY_PAIR_NAME
1	2025-01-08	281.85818	282.03400	281.75354	281.97794	AED/ARS
2	2025-01-08	0.43580	0.43959	0.43580	0.43817	AED/AUD
3	2025-01-08	0.54996	0.55294	0.54996	0.55032	AED/BBD
4	2025-01-08	0.10263	0.10275	0.10251	0.10272	AED/BHD
5	2025-01-08	1.66210	1.67589	1.66039	1.66384	AED/BRL
6	2025-01-08	0.39033	0.39198	0.39033	0.39148	AED/CAD
7	2025-01-08	0.24708	0.24848	0.24708	0.24804	AED/CHF
8	2025-01-08	273.53796	275.91394	272.69125	272.71576	AED/CLP
9	2025-01-08	1.99463	1.99821	1.99419	1.99504	AED/CNY
10	2025-01-08	1.96189	1.97700	1.96144	1.97035	AED/DKK
11	2025-01-08	0.26296	0.26496	0.26290	0.26406	AED/EUR
12	2025-01-08	4404.16553	4426.67041	4396.75977	4421.22266	AED/IDR
13	2025-01-08	0.99267	1.00188	0.99140	0.99829	AED/ILS
14	2025-01-08	38.20038	38.44829	38.19525	38.32017	AED/ISK
15	2025-01-08	42.60277	42.83421	42.60277	42.68482	AED/JMD
16	2025-01-08	0.19314	0.19363	0.19277	0.19313	AED/JOD
17	2025-01-08	35.25728	35.40974	35.12115	35.25728	AED/KES
18	2025-01-08	24495.40430	24523.66211	24394.22656	24394.22656	AED/LBP
19	2025-01-08	80.48778	80.92347	80.48778	80.67178	AED/LKR
20	2025-01-08	2.73271	2.74270	2.73271	2.73271	AED/MAD

→ Create a fact Table for trading data

SURVEY_DATABASE / SURVEY_SCHEMA / FACT_TAB_TRADING

Table Details Columns Data Preview Copy History Lineage

• P4_WAREHOUSE | 15 Rows • Updated 2 minutes ago

	TRADE_ID	BUY MONEY	SELL MONEY	PROFIT
1	1001	17550	17825	275
2	1003	108500	109200	700
3	1005	20287.5	20425	137.5
4	1007	94875	95400	525
5	1009	10593.75	10687.5	93.75
6	1011	26437.5	26925	487.5
7	1013	136000	136875	875
8	1015	30543.75	30806.25	262.5
9	1017	126800	127500	700
10	1019	14225	14450	225
11	1021	35500	36050	550
12	1023	163500	164700	1200
13	1025	40950	41325	375
14	1027	158750	159750	1000
15	1029	17968.75	18281.25	312.5